

AMENDMENTS TO THE CLAIMS

Claims 1-28 (Canceled).

29. (New) A sharpening unit for a rotating disk-shaped blade comprising at least one sharpening grinding wheel, a control component axially slidable in a support and moving angularly around an axis of said control component, and means for controlling angular movement of said control component in the support, wherein axial movement of the control component transmits motion to said grinding wheel which corresponds to said angular movement.

30. (New) Sharpening unit as claimed in claim 29, wherein said control component further comprises a bushing axially slidable in said support and which moves angularly around the axis of the control component; said at least one grinding wheel being supported coaxially to said bushing; and said means for controlling the angular movement of the control component controls angular movement of the bushing in the support, wherein axial movement of the bushing and therefore of the grinding wheel correspond to said angular movement.

31. (New) Sharpening unit as claimed in claim 29, further comprising a cam mechanism disposed between the support and said control component to produce axial

translation of the control component when the control component rotates around said axis.

32. (New) Sharpening unit as claimed in claim 31, further comprising an actuator associated with said control component, said actuator constructed and arranged to control rotatory movement of the control component around said axis.

33. (New) Sharpening unit as claimed in claim 32, wherein said actuator is a piston-cylinder actuator.

34. (New) Sharpening unit as claimed in claim 33, further comprising means for controlling contact pressure between the grinding wheel and the disk-shaped blade.

35. (New) Sharpening unit as claimed in claim 34, wherein said means to control the contact pressure comprises means to control operating pressure of fluid which operates said piston-cylinder actuator.

36. (New) Cutting machine for cutting elongated products comprising a disk-shaped blade and a sharpening unit according to claim 29, 30, 31, 32, 33, 34 or 35.

37. (New) Cutting machine for cutting elongated products comprising at least one path for the products to be cut; at least one device for feeding the products along said path according to a direction of feed; a rotating element rotating around a main axis of rotation; on said rotating element, at least one disk-shaped blade rotating around an

axis of rotation, said at least one disk-shaped blade being provided with alternate translatory motion, substantially parallel to the direction of feed; wherein the at least one disk-shaped blade moves axially in relation to the rotating element during rotation of said rotating element, and the translatory motion of the at least one disk-shaped blade is controlled so that the blade moves in a common direction with the direction of feed of the products to be cut when the blade is engaged in said products to follow feed of the products during cutting, motion in an opposite direction to the direction of feed of the products being imparted on said blade in a period of time in which the blade is disengaged from said products.

38. (New) Cutting machine as claimed in claim 37, wherein said main axis of rotation of the rotating element and said axis of rotation of the at least one disk-shaped blade are substantially parallel to each other and to the direction of feed of the products to be cut.

39. (New) Cutting machine as claimed in claim 37, wherein at least two disk-shaped blades are carried on said rotating element.

40. (New) Cutting machine as claimed in claim 39, wherein each of said at least two disk-shaped blades is

carried by a sleeve sliding axially in a corresponding seat of the rotating element.

41. (New) Cutting machine as claimed in claim 40, further comprising a sharpening unit for a respective disk-shaped blade of said at least two disk-shaped blades, wherein the sharpening unit is integral with each said sleeve and translates with an alternate motion integral with a corresponding disk-shaped blade.

42. (New) Cutting machine as claimed in claim 37, wherein each of said at least one disk-shaped blade is operated in alternate motion by a common cam component.

43. (New) Cutting machine as claimed in claim 42, further comprising a feeler cooperating directly with said common cam component and being associated with each of said at least one disk-shaped blade.

44. (New) Cutting machine as claimed in claim 42, wherein said common cam component transmits movement to each said sleeve via respective rocker components supported by said rotating element.

45. (New) Cutting machine as claimed in claim 40, wherein each said sleeve includes an anti-rotation means which prevents rotation while allowing translation of the sleeve around an axis in relation to the rotating element.

46. (New) Cutting machine as claimed in claim 41, wherein each said sharpening unit comprises at least one grinding wheel that moves from an operating position, in contact with a cutting edge of a respective disk-shaped blade of said at least two disk-shaped blades, to a non-operating position out of contact with said respective disk-shaped blade.

47. (New) Cutting machine as claimed in claim 41, wherein each said sharpening unit comprises two grinding wheels for sharpening two sides of a cutting edge of a respective blade.

48. (New) Cutting machine as claimed in claim 47, wherein two grinding wheels each move from a respective operating position in contact with a side of the cutting edge of the respective disk-shaped blade, to a respective non-operating position out of contact with said disk-shaped blade.

49. (New) Cutting machine as claimed in claim 48, wherein said at least one grinding wheel moves toward or away from the cutting blade and is parallel to an axis of the at least one grinding wheel.

50. (New) Cutting machine as claimed in claim 46, wherein each of said at least one grinding wheel is carried

by a bushing axially slidable in a support integral with the sleeve of the respective blade.

51. (New) Cutting machine as claimed in claim 50, wherein said bushing moves angularly around an axis thereof coinciding with the axis of rotation of the grinding wheel.

52. (New) Cutting machine as claimed in claim 51, further comprising a cam mechanism which produces axial translation of the bushing when said bushing rotates around said axis, and is disposed between said support and the bushing.

53. (New) Cutting machine as claimed in claim 50, further comprising an actuator which controls rotary movement of the bushing around said axis, said actuator being associated with each said bushing.

54. (New) Cutting machine as claimed in claim 50, wherein said bushing has a helical groove in which a small wheel integral with said support engages.

55. (New) Cutting machine for cutting elongated products comprising at least one path for the products to be cut; at least one device for feeding the products along said path according to a direction of feed; a rotating element rotating around a main axis of rotation; on said rotating element, at least one disk-shaped blade rotating around an axis of rotation of said blade, said blade being provided

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with alternate translatory motion parallel to said axis of said blade during rotation of said rotating element substantially parallel to the direction of feed; wherein each of said at least one disk-shaped blade is operated in said alternate translatory motion by a common cam component.

56. (New) Machine as claimed in claim 55, wherein said common cam component is substantially fixed.